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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/006,067 | 12/06/2001 | Davide Mandato | 450117-03704 | 9049 |

20999 7590 02/16/2005

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| EXAMINER |
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BATURAY, ALICIA

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| ART UNIT | PAPER NUMBER |
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2155

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|----------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/006,067 | MANDATO ET AL. | |
| | Examiner | Art Unit | |
| | Alicia Baturay | 2155 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☒ Claim(s) 1-46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/006,067.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>02072005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-46 are pending.

Claim Objections

2. Claims 1-46 are objected to because of the following informalities: they contain reference characters corresponding to elements recited in the detailed description of the drawings. Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-46 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-23 recite a "processing system" in the body. Claims 24-46 recite "pieces of software" in the body.

Descriptions and expressions of a computer program not encoded on a computer readable medium do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized (See MPEP 2106.IV.B.1(a)). Therefore Claims 24-46 are directed to non-statutory subject matter.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-17, 20-40, and 43-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Zinky et al. (U.S. 6,480,879).
7. With respect to claim 1, Zinky discloses a processing system for one or more communication networks with middleware comprising an application programming interface (Zinky, col. 9, lines 47-50) cast over a data model describing quality-of-service contracts (Zinky, col. 5, line 66-col. 6, line 4) and quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using the application programming interface, in order to manage quality-of-service and mobility-aware network connections with other applications (Zinky, col. 6, lines 22-30).
8. With respect to claims 2 and 25, Zinky discloses a processing system characterized in, that the adaptation paths are expressed as hierarchical finite state machines based on quality-of-service contexts (Zinky, col. 6, lines 22-36). The Authoritative Dictionary of IEEE Standards Terms defines a finite state machine as “a computational model consisting of a finite number

of states and transitions between those states, possibly with accompanying actions.” Zinky teaches a contract that detects a transition condition that results in one of three regions of QoS.

9. With respect to claims 3 and 26, Zinky discloses a processing system characterized in, that a quality-of-service context identifies an arrangement of quality-of-service specifications to be enforced throughout a given set of streams (Zinky, col. 6, lines 7-11).
10. With respect to claims 4 and 27, Zinky discloses a processing system characterized in, that the hierarchical finite state machines comprise controllable states in the context of streams at the lowermost level (Zinky, col. 7, lines 26-36).
11. With respect to claims 5 and 28, Zinky discloses a processing system characterized in, that quality-of-service synchronisation is provided so as to ensure that some user's given constraints on quality-of-service are globally enforced throughout a given set of streams (Zinky, col. 3, lines 60-67).
12. With respect to claims 6 and 29, Zinky discloses a processing system characterized in, that the specification of the quality-of-service contracts comprises hysteresis parameters for the transition between quality-of-service states (Zinky, col. 9, lines 51-56).

Art Unit: 2155

13. With respect to claims 7 and 30, Zinky discloses a processing system characterized in, that the specification of the quality-of-service contracts comprises utility parameters defining user's perceived utility factors associated with the respective quality-of service contract (Zinky, col. 6, lines 12-21).
14. With respect to claims 8 and 31, Zinky discloses a processing system characterized by an application handler unit offering the application programming interface for providing quality-of-service aware mobile multimedia applications with the possibility of managing network connections with other applications (Zinky, col. 5, line 66-col. 6, line 4).
15. With respect to claims 9 and 32, Zinky discloses a processing system characterized in, that the application handler unit registers requests for notification events from applications and generates such events whenever the corresponding triggering conditions occur (Zinky, col. 7, lines 52-57).
16. With respect to claims 10 and 33, Zinky discloses a processing system characterized in, that the application handler unit operates on the basis of a data model comprising streams, quality-of-service context (Zinky, col. 6, lines 7-11), quality-of-service associations and adaptation paths (Zinky, col. 8, lines 48-56) modeled as hierarchical finite state machines (Zinky, col. 6, lines 22-36).

Art Unit: 2155

17. With respect to claims 11 and 34, Zinky discloses a processing system characterized in, that the application handler unit creates for each unidirectional stream an instance of a chain controller for handling data plane and quality-of-service control plane related issues (Zinky, col. 7, lines 6-18).
18. With respect to claims 12 and 35, Zinky discloses a processing system characterized in, that the chain controller compares the quality-of-service requirements of a user with actual values of monitored parameters and configures a chain of multimedia components accordingly (Zinky, col. 7, lines 38-57).
19. With respect to claims 13 and 36, Zinky discloses a processing system characterized in, that the chain controller creates and manages a transport service interface socket, whereby the multimedia components directly exchange data through the transport service interface socket (Zinky, col. 5, lines 52-65).
20. With respect to claims 14 and 37, Zinky discloses a processing system characterized in, that the chain controller monitors and controls the local resources required to process the given stream by using resource managers (Zinky, col. 9, lines 30-38).
21. With respect to claims 15 and 38, Zinky discloses a processing system characterized by a quality-of-service broker for managing overall local resources by managing the whole set of streams via the chain controllers (Zinky, col. 5, lines 23-30).

22. With respect to claims 16 and 39, Zinky discloses a processing system characterized in, that the quality-of-service broker manages system-wide resources via resource controllers (Zinky, col. 9, lines 30-38).
23. With respect to claims 17 and 40, Zinky discloses a processing system characterized in, that the quality-of-service broker controls end-to-end quality-of-service negotiation by using a session manager (Zinky, col. 3, lines 60-67).
24. With respect to claims 20 and 43, Zinky discloses a processing system characterized in, that the application handler unit and the various instances of the chain controller are forming an application handler cluster (Zinky, col. 4, lines 20-31).
25. With respect to claims 21 and 44, Zinky discloses a processing system characterized in, that the application handler cluster and the quality-of-service broker cluster are included in one open distributed processing capsule (Zinky, col. 5, lines 10-18).
26. With respect to claims 22 and 45, Zinky discloses a processing system characterized in, that the application handler cluster and the quality-of-service broker cluster are included in separate open distributed processing capsules (Zinky, col. 5, lines 10-18).

27. With respect to claims 23 and 46, Zinky discloses a processing system characterized in, that the application handler cluster being included in one open distributed processing capsule is installed on a given local node and the quality-of-service broker cluster being included in separate open distributed processing capsule is installed on a separate open distributed processing node, whereby a proxy quality-of-service broker is installed on the given local node (Zinky, col. 5, lines 11-16).

28. With respect to claim 24, Zinky discloses a pieces of software for one or more communication networks, being loadable in one or more memory means of one or more processing devices or nodes of the one or more communication networks, representing middleware comprising an application programming interface (Zinky, col. 9, lines 47-50) cast over a data model describing quality-of-service contracts (Zinky, col. 5, line 66-col. 6, line 4) and quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using the application programming interface, in order to manage quality-of-service and mobility-aware for managing network connections with other applications (Zinky, col. 6, lines 22-30).

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. Claims 18, 19, 41, and 42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zinky and further in view of Cardei et al. ("Hierarchical Architecture for Real-Time Adaptive Resource Management").
31. With respect to claims 18 and 41, Zinky discloses a quality-of-service broker (Zinky, col. 5, lines 23-30). But Zinky does not expressly disclose the ability to download plug-ins. However, Cardei does teach a processing system characterized in, that the quality-of-service broker includes further functionality for downloading plug-ins corresponding to a given version of a data model which can not be handled by the application handler unit (Cardei, page 421, paragraph 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Zinky and Cardei in order to facilitate the use of a new model by replacing a set of components that interface with the application without rewriting the entire program (Cardei, page 421, paragraph 6).
32. With respect to claims 19 and 42, Zinky and Cardei (Zinky-Cardei) discloses a processing system characterized in, that the quality-of-service broker and the plug-ins are forming a quality-of-service broker cluster (Cardei, page 418, paragraph 4).

Art Unit: 2155

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Baturay whose telephone number is (571) 272-3981. The examiner can normally be reached at 7:30am - 5pm, Monday - Thursday, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alicia Baturay
February 15, 2005


HOSAIN ALAM
SUPERVISORY PATENT EXAMINER